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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,870	12/14/2001	Stephen Arthur Anderson	01-754	5982

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EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/016,870

Applicant(s)

ANDERSON, STEPHEN ARTHUR

Examiner

Jennifer A Boyd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The Applicant's Amendments and Accompanying Remarks, filed November 12, 2003, have been entered and have been carefully considered. Claim 10 is amended and claims 1 – 19 are pending. In view of Applicant's Amendment, the Examiner withdraws the 35 U.S.C. 112 rejection of claim 10 as set forth in paragraphs 1 – 2 of the previous Office Action dated August 13, 2003. In view of Applicant's Arguments, the Examiner withdraws all set forth rejections as detailed in paragraphs 3 – 6 of the previous Office Action dated August 13, 2003. Despite these advances, the invention as currently claimed is not found to be patentable for reasons herein below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. In claim 1, it is unclear whether the phrase "wherein said maximum void size is chosen to limit flame propagation of an ignited fluid through said member" positively recites the void size. It is unclear to the Examiner whether the void size has simply been chosen or whether it is

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actually being used in the claimed invention. It is suggested to the Applicant to remove the term "chosen" from the claim language.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 3 - 4, 8, 10, 12, 17 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Alhamad (US 6,349,774).

Alhamad is directed to compositions of matter for stopping fires, explosions and oxidations of materials (Title).

As to claims 1, 10 and 12, Alhamad teaches an expandable metal product for use in extinguishing fires (Abstract). Alhamad teaches a three-dimensional expandable metal net having discontinuous slits in spaced apart lines parallel to each other but transverse to the longitudinal dimension of the sheet (column 2, lines 25 – 35). Alhamad teaches the fire extinguishing capability of the metal net is based on the phenomenon that flame at the surface of a burning material cannot pass upwardly through the pores of the metal net (column 2, lines 33 – 36). Alhamad teaches by controlling the extent of the stretching, it is possible to produce an expanded metal primatic net structure having the desired shape and size of eyes, and the desired expansion in area, depending on the use intended (column 6, lines 20 – 25). As seen in Figures

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3A – 3D, the material is more porous than dense. It should be noted that the Examiner has not given weight to “wherein said maximum void size is chosen to limit flame propagation of an ignited fluid through said member” because it has not been positively recited whether the void size has been simply chosen or whether it is being used in the claimed invention. It should be noted that it has been held that the recitation that an element is “adapted to” perform a function is not a positive limitation but only requires that ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138. The Examiner has given “adapted to cover at least a portion of the hot casing” patentable weight at this time, but it is highly recommended to amend the claim language.

As to claim 3, Alhamad teaches that the metal net can be cut into small segments which are formed into small ellipsoid shapes which in themselves are useful in extinguishing or preventing fires or explosions, or maybe used in combination with larger sheets of the expanded metal net for such purposes (column 8, lines 29 – 35). In Figure 4, it is shown that the ellipsoid exhibits an irregularly intertwined pattern.

As to claim 4, Alhamad teaches the use of the metal net and/or in combination with small metal ellipsoids to create the fire extinguishing net.

As to claims 8 and 19, Alhamad teaches that the metal net can comprise magnesium alloys, aluminum, steel and copper which are all known in the art as metals (column 5, lines 30 – 45).

As to claim 17, it should be noted that the size of the pores is determined to limit propagation of the flames through the material (column 6, lines 20 – 25). As seen in Figures 3C

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and 3E, the pores are regularly spaced and sized. Therefore, the pore size will be the same, or Applicant's "smaller than the maximum size", in at least one direction.

Claim Rejections - 35 USC § 103

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alhamad (US 6,349,774).

Alhamad discloses the claimed invention except the flame arresting matrix has a percent-density of between 10 and 30% as required by claim 16. It should be noted that void size and density is a result effective variable. For example, as void size increases, the density decreases. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create the flame arresting matrix having a percent-density of between 10 and 30% as required by claim 16, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the void size and density to create a member that is appropriately flexible while limiting flame propagation.

8. Claims 2, 7 – 8, 11, 13 – 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alhamad (US 6,349,774) in view of Gooliak (US 2003/0060107 A1).

Alhamad teaches the claimed invention above except fails to disclose that the fire retarding device is removable from hot casing as required by claims 2 and 18, the member is disposed immediately adjacent to the hot casing as required by claims 7, 11 and 13, the hot

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casing is an aircraft engine casing as required by claim 8 and the material further comprises at least one insulative blanket as required by claim 14.

Gooliak is directed to a thermal management system utilizing a composite thermal radiation barrier (Abstract) used to control effects of heat generated by engines, exhaust components, furnaces, any auxiliary power unit, fuel-burning heaters and other combustion equipment (page 1, [0002]). Gooliak teaches a thermal blanket wrap comprising a *tube 32* which represents the high temperature portion to be insulated and *layer 34* is a wrapped flexible metallic woven or knit mesh layer for example Inconel™ metal mesh (page 4, [0033] and see Figure 2). Due to the fact that Gooliak teaches that the blanket wrap can be used to encase an exhaust manifold (page 4, [0033]), the Examiner equates the tube 32 to Applicant's "hot casing". Gooliak teaches that the thermal blanket wrap, equated to Applicant's "fire retarding device", has a *split line 42* which is sealed using a number of *fasteners 44* (page 4, [0033] and see Figure 2). The presence of fasteners implies that the thermal blanket wrap can be removed as required by claims 2 and 18. Gooliak teaches in Figure 2 that the *layer 34* is directly adjacent to the *tube 32* which represents the high temperature portion to be insulated (page 4, [0033]) as required by claims 7, 11 and 13. Gooliak teaches that heat resistant insulation blanket of the invention can be used for various applications including portions of an aircraft, such as the combustion, turbine and tailpipe sections of the turbine engines which must be isolated from the rest of the aircraft by a properly rated fire wall (page 1, [0003]) as required by claim 8. Gooliak teaches that *layer 36*, equated to Applicant's "insulative thermal blanket", is a wrapped primary insulation blanket layer which can be made of mineral fibers such as SFB 200 or SFB 250 available from Carbon

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Cloth Technologies (page 4, [0033] and page 3, [0027]). As shown in Figure 2, *layer 36* wraps around *layer 34* as required by claim 14.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the flame extinguishing metal sheet of Alhamad as a layer in the thermal management system of Gooliak motivated by the desire to efficiently extinguish fires that can quickly propagate and cause severe damage in high-temperature applications.

9. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alhamad (US 6,349,774) in view of Nevin (GB 2,266,051 A).

Alhamad teaches the claimed invention above except fails to disclose that the material has a plurality of insulative thermal blankets disposed adjacent one another around the hot casing, wherein the flexible member is disposed between adjacent sections of the insulative thermal blankets as required by claim 5 and the insulative thermal blanket is disposed around the hot casing and the flexible member is disposed around the insulative thermal blanket as required by claim 6.

Nevin is directed to an anti-fire structure commonly used for fire protection for various locations in aircrafts (Abstract). Figure 1 teaches the extinguishing of spilt liquids such as petrol, oil and kerosene burning to flames by use of the anti-fire structure (Figure 1 and page 6). Nevin teaches an anti-fire structure comprising metal structures such as metal wool or metal tangles alternating in a carpet in a layered fashion (Abstract and see Figures 1, 5 and 6). Nevin teaches that the anti-fire structure can be rolled onto a fuel tank, equated to Applicant's "hot casing", with the carpet side facing the fire to quench a burning fire (Abstract, see Figure 1 and page 6).

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Nevin teaches that in the anti-fire structure contains metal structures such as metal wool or metal tangles that horizontally divide a carpet into layers of alternating carpet sections and metal layers. See Figures 1, 5 and 6. Each portion of carpet separated by the metal layers is a considered to be Applicant's "insulative thermal blankets". Carpets are known in the art to be insulating materials.

It would have been obvious to one of ordinary skill in art at the time the invention was made to dispose the extinguishing metal product within an insulative material such as a carpet as suggested by Nevin motivated by the desire to reduce the temperature of the material.

It would have been obvious to one of ordinary skill at the time the invention was made that the fire inciting liquid can be some form of jet fuel as suggested by Nevin when using the metal product of Alhamad motivated by the fact that burning fuel is extremely hazardous and a likely cause of a fire on an airplane.

Response to Arguments

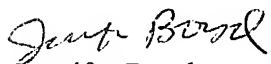
10. Applicant's arguments with respect to claims 1 – 19 have been considered but are moot in view of the new ground(s) of rejection.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-0994.


Jennifer Boyd
January 21, 2004


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